

Abstract of the Disclosure

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A method and apparatus for a reliable data storage system using block level

checksums appended to data blocks. Files are stored on hard disks in storage blocks,

including data blocks and block-appended checksums. The block-appended checksum

includes a checksum of the data block, a VBN, a DBN, and an embedded checksum for

checking the integrity of the block-appended checksum itself. A file system includes file

blocks with associated block-appended checksum to the data blocks. The file blocks with

block-appended checksums are written to storage blocks. In a preferred embodiment a

collection of disk drives are formatted with 520 bytes of data per sector. For each 4,096-byte

file block, a corresponding 64-byte block-appended checksum is appended to the file block

with the first 7 sectors including most of the file block data while the 8th sector includes the

remaining file block data and the 64-byte block-appended checksum.